

## REMARKS

In view of the above amendments and the following remarks, reconsideration of the rejections contained in the Office Action of December 12, 2006 is respectfully requested.

By this Amendment, claims 9 and 14 have been amended, and claim 17 has been cancelled. Thus, claims 1, 5, 6, 8-10, 14, 15, 18 and 21 are currently pending in the application. No new matter has been added by these amendments.

On pages 2-4 of the Office Action, the Examiner rejected claims 1, 5, 6, 8 and 21 under 35 U.S.C. § 103(a) as being unpatentable over Takizawa (US 6,504,254) in view of Miyako (US 6,486,565). In addition, on pages 5-7 of the Office Action, the Examiner rejected claims 9, 10, 14, 15, 17 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Takizawa in view of Miyako. For the reasons discussed below, it is respectfully submitted that the present claims, including independent claims 1, 9 and 14, are clearly patentable over the prior art of record.

Independent claim 1 recites a semiconductor device which includes a semiconductor substrate having a pattern forming region and a pattern non-forming region, a wiring pattern formed on the pattern forming region, and a plurality of dummy patterns formed on the pattern non-forming region, with the plurality of dummy patterns being formed within a plurality of dummy areas, and with each of the plurality of dummy areas having a same shape. Claim 1 also recites that *each of the dummy patterns has a plurality of parallel line patterns, each of the line patterns of the plurality of line patterns being spaced apart from each other* by an area filled by the deposition of said insulating film. Claim 1 also recites that a distance between each of the line patterns of the plurality of line patterns is less than 72  $\mu\text{m}$ .

Takizawa discloses hexagonal-shaped dummy wiring sections 30 having an opening 32 (Fig. 2) or a plurality of openings 32 (Fig. 4). However, as acknowledged by the Examiner on page 3 of the Office Action, Takizawa does not disclose that *each of the dummy patterns has a plurality of parallel line patterns, with each of the line patterns of the plurality of line patterns being spaced apart from each other*, as required by independent claim 1.

Miyako discloses a semiconductor device which, as shown in Fig. 1, includes a plurality of dummy patterns 12. In addition, Fig. 2 of Miyako discloses a dummy pattern formed of a

plurality of columns. Thus, the Examiner concludes that it would have been obvious to one of ordinary skill in the art to modify the dummy pattern of Takizawa with a dummy pattern formed of a plurality of columns as taught by Miyako.

However, it is noted that Takizawa discloses that each dummy wiring section 30 includes at least one through-hole 32 surrounded by a peripheral portion of the wiring section 30. It is also noted that a proposed modification to a prior art reference would not have been obvious to one of ordinary skill in the art if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, as stated in MPEP § 2143.01. In this regard, the dummy pattern 12 of Miyako is a plurality of parallel columns which does not include at least one through-hole. Therefore, the addition of the dummy pattern of Miyako to the semiconductor of Takizawa would render the invention of Takizawa unsatisfactory for its intended purpose, because the parallel columns of Miyako do not include a through-hole, and would therefore substantially increase the area of the dummy wiring section 30 which overlaps the first wiring layer 14 of Takizawa. Accordingly, it is respectfully submitted that it would not have been obvious to one of ordinary skill in the art to combine the Takizawa and Miyako references so as to result in the invention of independent claim 1.

Amended independent claim 9 recites a semiconductor device which includes a semiconductor substrate having a pattern area and a non-pattern area, a conductive pattern formed on the pattern area of the semiconductor substrate, and a plurality of dummy patterns formed on the non-pattern area of the semiconductor substrate, with each of the plurality of dummy patterns having a same continuous rectangular outline shape as each other and being arranged in a matrix with predetermined spacing. Claim 9 also recites that *each of the dummy patterns has only one square-shaped opening* so that a pattern ratio of the semiconductor device is reduced. Claim 9 also recites that a width of the opening of each of the dummy patterns is less than 72  $\mu\text{m}$ .

Amended independent claim 14 recites a semiconductor device which includes a semiconductor substrate having a pattern area and a non-pattern area, a conductor pattern formed on the pattern area of the semiconductor substrate, and a plurality of dummy patterns formed on

the non-pattern area of the semiconductor substrate. Claim 14 also recites that each of the dummy patterns has a space portion within each of the dummy areas so that a pattern ratio of the semiconductor device is reduced. Further, claim 14 recites that each of the dummy patterns includes an opening at the space portion, with the opening *having a shape of a letter or a number*, with each opening of the dummy patterns having a width less than 72  $\mu\text{m}$ .

As discussed above, Takizawa discloses hexagonal-shaped dummy wiring sections 30 having an opening 32 (Fig. 2) or a plurality of openings 32 (Fig. 4). However, Takizawa does not disclose that *each of the dummy patterns has only one square-shaped opening*, as required by amended independent claim 9. It is noted that Fig. 4(c) of Takizawa discloses a dummy wiring section which includes square-shaped openings. However, Takizawa discloses a dummy wiring section which includes four square-shaped openings, and therefore does not disclose dummy patterns which each have only one square-shaped opening. Further, Takizawa does not disclose that *each of the dummy patterns includes an opening at the space portion, with the opening having a shape of a letter or a number*, as required by amended independent claim 14.

Nonetheless, the Examiner asserts that it would have been obvious to one of ordinary skill in the art to modify the dummy pattern of Takizawa to have only one square shaped opening, or to have an opening having a shape of a letter or a number. In this regard, it is noted that “rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also KSR International Co. v. Teleflex Inc., 550 U.S. \_\_\_, \_\_\_, 82 USPQ2d 1385, 1396 (2007).

In this regard, it is noted that on pages 7 and 8 of the Office Action, the Examiner indicates that Takizawa discloses that the hole of the dummy pattern may have any configuration, and also asserts that a change in the shape of a component is generally regarded as being within the level of ordinary skill in the art. Therefore, the Examiner appears to take the position that any change in shape in the opening of the dummy pattern would necessarily be obvious in view of Takizawa. However, it is respectfully submitted that this assertion is merely conclusory and does

not include the required articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. Rather, the reasoning appears to rely solely on the boilerplate statement of Takizawa that the hole of the dummy pattern may have "any configuration" and the general recognition of changes in shape being within the level of ordinary skill in the art.

Accordingly, it is respectfully submitted that the features of independent claims 9 and 14 as identified above are not disclosed by the Takizawa reference, and would not have been obvious to one of ordinary skill in the art. Further, it is noted that the Miyako reference does not cure the defects of the Takizawa reference as described above.

Therefore, it is respectfully submitted that amended independent claims 1, 9 and 14, as well as claims 5, 6, 8, 10, 15, 17, 18 and 21 which depend therefrom, are clearly allowable over the prior art of record.

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice to that effect is respectfully solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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